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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/345,669	06/30/1999	RONALD K. MINEMIER	INTL-0227-US	1490

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EXAMINER	
TRAN, NHAN T	
ART UNIT	**PAPER NUMBER**
2615	

DATE MAILED: 01/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/345,669	MINEMIER, RONALD K.	
	Examiner	Art Unit	
	Nhan T. Tran	2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 August 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13 and 15-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13 and 15-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-13 & 15-30 have been considered but are moot in view of the new ground of rejection.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 15-30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 15 recites the limitation "the array" in line 4 and "said imaging array" in line 5 of the claim. There is insufficient antecedent basis for these limitations in the claim.

Claims 16-21 are rejected as being dependent of claim 15.

Claim 22 recites the limitation "the element data" and "said elements" in line 5 of the claim. There is insufficient antecedent basis for these limitations in the claim. For "said elements," which elements the Applicant refers to? sensing elements or defective elements ?

Claims 23-30 are rejected as being dependent of claim 22.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-7, 12, 13, 22-24, 27, 28 are rejected under 35 U.S.C. 102(e) as being anticipated by Therrien (US 4,523,231).

Regarding claim 1, Therrien discloses a method of detecting sensing element arrays comprising: reading out a frame of sensing element data from an array (21); and determining the number of defective elements by analyzing the data during the frame read out. See Abstract, col. 2, lines 14-50.

Regarding claim 2, Therrien also discloses that the sensing element array is an imaging array and that the method further including programmably (by means of hardware) setting high and low limits for pixel intensity values (Fig. 4; col. 7, lines 44-52 and col. 8, lines 17-25, wherein each reference digital signal has been programmed for comparison at the comparators).

Regarding claim 3, it is clear that high and low limits are set based on illumination conditions (lamp off and lamp on). See Fig. 4; col. 7, lines 44-52 and col. 8, lines 17-25, wherein each comparator is set to a digital reference signal limit corresponding to each illumination condition.

Regarding claims 4 & 5, see the analysis of claims 2 & 3.

Regarding claim 6, it is seen in Therrien that defective pixels in the focal plane of the pixel array 21 are all identified (col. 2, lines 25-50).

Regarding claim 7, as disclosed by Therrien, the number of spatial defects (inherently each defective pixel is a spatial defect in an imaging array) is determined by analyzing the pixel data (col. 2, lines 25-50).

Regarding claim 12, the information about the location of defective pixels is stored in a memory (col. 10, lines 38-54 and col. 11, line 50 – col. 12, line 7).

Regarding claim 13, Therrien also discloses that each of RAM 95 (Fig. 7B) is a 1K-10bit RAM which has enough 1024 different 10-bit word to correspondingly store 1024 elements in each line (col. 10, lines 47-53 and col. 11, lines 13-18) and a defect exist bit is represented by the address of the defective pixel itself in the RAM 95.

Regarding claim 22, see the analysis of claim 1 and Figs. 1-7B for a sensing device and circuit configuration.

Regarding claim 23, see the analysis of claim 2. In order to for the digital reference signals 16 and 48 (Fig. 4) to be set for high and low limits, a storage for storing these signals is inherent in such an imaging system for the system to function as disclosed.

Regarding claim 24, see the analysis of claim 7.

Regarding claims 27 & 28, see the analysis of claims 12 & 13.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 8-11, 15-21, 25-26, 29-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Therrien (US 4,523,231) in view of Fossum (US 6,611,288).

Regarding claim 8, Therrien does not teach determining whether two defective pixels are closer together than a programmable offset. As taught by Fossum, a programmable offset of 5

pixels around x and y of a central pixel is set to identify defective pixels that are closer together in the area of 5x5 (col. 3, lines 1-23) to enable a defective pixel area to be identified not only as a single defective pixel but also as a group of pixels that are some way defective (col. 1, lines 65-67).

Therefore, it would have been obvious to one of ordinary skill in the art to modify the imaging system in Therrien for further determining whether two defective pixels are closer together than a programmable offset so that not only a single defective pixel would be identified but a group of defective pixels would be also be identified for an efficient image processing.

Regarding claim 9, Fossum further teaches adding a column or row addresses where a defect exists to a programmable offset and storing the address with the offset in form of (R, C, T) as described in col. 3, lines 1-23. It is seen that the row and column addresses are added to the indicia and stored in the register to expand the area of a defective group.

Regarding claim 10, Fossum further teaches counters and the like for use to compare the neighborhoods for defective pixels (col. 4, lines 16-20).

Regarding claim 11, Fossum also teaches the number of spatial defects by column and row are identified (col. 3, lines 1-23).

Regarding claim 15, the imaging system in the combination of Therrien and Fossum would be configured using a software program stored in a storage medium that causes a

processor-base system to operate as disclosed instead of hardware circuitry in an obvious variation suggested by Fossum in col. 4, lines 24-27.

Regarding claims 16 & 17, see the analysis of claims 3 & 4 and note that the analysis of claim 15 is also applied.

Regarding claims 18 & 19, see the analysis of claims 7 & 8 and note that the analysis of claim 15 is also applied.

Regarding claims 20 & 21, see the analysis of claims 11 & 12 and note that the analysis of claim 15 is also applied.

Regarding claim 25, see the analysis of claim 9, wherein "a window circuit" is represented by the circuitry of defective error detection shown in Figs. 1, 4,5, 7A & B in Therrien and/or Figs. 2 & 3 in Fossum.

Regarding claim 26, Fossum also discloses a comparator 320 adapted to compare address of a defective pixel to the stored address plus the programmable offset (col. 3, line 55 – col. 4, line 7).

Regarding claims 29 & 30, the combination of Therrien and Fossum would be realized by those skilled in the art that the image sensor and defective pixel detection circuitry would be

integrated into a single chip (same die) as shown in Figs. 2 & 3 in Fossum to reduce size and cost of an imaging system.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nhan T. Tran whose telephone number is (703) 605-4246. The examiner can normally be reached on Monday - Thursday, 8:00am - 6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew B Christensen can be reached on (703) 308-9644. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

NT.

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